

REMARKSInformation Disclosure Statement

The references listed on the attached PTO forms are called to the attention of the U.S. Patent and Trademark Office. Applicants enclose a copy of each of these references. The fee set forth in Rule 17(p) is attached.

Enclosed is a copy various papers from the *Ex Parte* Reexamination proceeding in copending Reexamination Application No. 90/006,150 of applicants and which have been filed since applicants' previous Amendment. Included in these enclosures are an Office Action, a Revised Amendment and Information Disclosure Statement and its enclosures including Supplemental Declaration of James H. Keithly, and a Written Statement of Interview. It is understood that all of the materials and information in the *Ex Parte* Reexamination are readily available to the Examiner to the extent deemed appropriate or necessary by the Office.

The enclosed papers include an International Search Report and the three references thereof. One of these references is a PCT Publication of U.S. references which are the subject of Terminal Disclaimers in the present application. Another of these references is an abstract of the Pao et al. article already of record in this application, same having been submitted with the IDS of June 28, 2001.

Other references are listed on the enclosed Information Disclosure Statement forms. One of these is the English language publication of Bonaventura et al. Applicants note same had been sent with the IDS of June 28, 2001.

One newly submitted reference is not in the English language. It includes a detailed English abstract. Applicants provide the following information on the following newly submitted references.

Barros, Carter & Hearn, *"Ambersweet Orange" - Processed Juice Quality Characteristics*, 1990, recites information on Ambersweet oranges which were harvested in its earlier development years, primarily 1987 and 1989. This states Ambersweet can be harvested for the fresh market from mid-October through December and for processing from mid-November through December. It mentions Ambersweet oranges were harvested from September to November 1989 in the Leesburg and Lake Wales areas. Flavor scores from a 9-point hedonic scale are noted for December harvests for pasteurized Ambersweet juice samples. It references the dark orange color of Ambersweet.

Donadio, Muller & Sempionato, *Evaluation of Sweet Orange Preimmunized Clones*, 1995, is from Brazil and provides information on preimmunized "clones" or cultivars listed in this publication. Preimmunized clones have a higher level of disease resistance than do the clones which are not preimmunized. One of these is Westin, which is indicated as "one of the best, related to tree growth, production and fruit quality." No information on NFC juice, NFC juice blends or NFC juice sensory qualities is given.

Lee & Castle, *Seasonal Changes of Carotenoid Pigments and Color in Hamlin, Earlygold, and Budd Blood Orange Juices*, 2000 or 2001, discusses the long-felt need to overcome Hamlin color limitations. It reports on studies of carotenoid pigment development in Hamlin, Earlygold and Budd Blood orange juices as the season progressed. Earlygold is a name given to Seleta

Vermelha cultivars. Juices of each cultivar were made and analyzed to provide pigment and color information. The article states that juice was extracted from fruit collected from September 1996 to January 1997 and from August 1997 to January 1998, which hand-reamed juices were filtered, pasteurized, cooled and frozen for the juice color and carotenoid extraction analyses. While the first paragraph of this article mentions blending "to improve the color score and flavor", this article gives no information to allow a correlation among juice quality, color score and flavor.

Andrade, Santos, Dondio & Ushirobira, *Determination of Some Characteristics of the Westin and Maracana Sweet Oranges (Citrus Sinensis L. Osbeck)*, 1977, concerns a fruit morphology study of Westin and Maracana oranges, which includes juice percentages, juice chemistry properties of soluble solids (Brix), acidity, and relation of acidity to soluble solid (S.S./Acidez, or BAR). Information of this type is of interest to growers of oranges for whole fruit markets and for juice processing. This article is in the context of Brazilian industry which at that time did not encompass NFC products.

This statement is provided in order to comply with 37 CFR §1.56, §1.97 and §1.98, and this statement is not to be construed as a representation that no information exists which is more material than these references, or that the information is considered to be material to patentability.

The Section 112 Rejection

In the Office Action, claims 1-21, 23-26 and 28-30 are rejected under 35 U.S.C. §112, first paragraph. Applicants have, it is believed, obviated this rejection by the amendments

which remove any reference to the fact that the claimed not from concentrate juice is pasteurized juice. Applicants understand the Office to agree that it is well known in the art that not from concentrate juice is pasteurized juice and that processing of juice into not from concentrate orange juice includes pasteurization. Therefore, applicants have removed from the claims the specific statement that not from concentrate juice is pasteurized juice. The claims state the products are not from concentrate products, which is clearly supported by the description as filed. Nevertheless, the claims continue to call for juices which are pasteurized (since they are NFC juices), which is not the case for cited references, as discussed in greater detail elsewhere.

Reconsideration and withdrawal of the Section 112 rejection are respectfully requested.

The Section 103 Rejection

Claims 1-21, 23-26 and 28-30 are rejected under 35 U.S.C. §103 from Bonaventura et al, "Refrigeration of Blood Oranges Destined for Transformation"; in view of *Citrus Industry*, June 99; and Pao et al, "Formulation of Sensory Evaluation of Fresh-Squeezed, Unpasteurized Juice Blends"; and further in view of Gmitter, "Characteristics and Potential New Citrus Cultivars"; and Widmer et al. "Flavonoids in Ambersweet Orange and the Impact on Juice Adulteration Detection"; and Braddock, excerpts from *Handbook of Citrus By-Products and Processing Technology*.

Summary

Applicants acknowledge that Braddock discloses that not from concentrate (NFC) juice is a pasteurized juice. Applicants cited Braddock in order to place in the record the fact that this well-known in the art. This is important because other references relied upon, for example Bonaventura, provide teachings which are contrary to the not from concentrate art of the present invention. This is important to unobviousness because Bonaventura, the primary reference, teaches the use of blood orange cultivars. Applicants' inventive work has included the discovery that blood orange cultivars in fact are not suitable for use in an NFC juice.

As discussed in more detail hereinafter, blood oranges provide acceptable color properties and acceptable Brix-to-Acid Ratio (BAR), which is a juice chemistry property. These good color and BAR values are not detrimentally affected when blood orange juice is pasteurized into NFC juice. In addition, when blood oranges are made into juices such as those of Bonaventura, that is juices which are not NFC pasteurized juices, the taste of the juice of this unprocessed fruit juice is very suitable.

However, and this is not taught by any of the references, when blood orange juice is processed into NFC pasteurized juice, it undergoes a negative transformation, so much so that the sensory properties of NFC blood orange juice is not at all satisfactory. Contrary to the present claims, the sensory qualities of blood orange juices, the subject of the Bonaventura reference, fall far short of the claimed features of being equivalent to the sensory qualities of NFC orange juice from either earlier season orange fruit, such as Hamlin orange

fruit, or late season round orange fruit, such as Hughes Valencia and Rhode Red Valencia NFC orange juice.

Blood orange juices are not alone in their unsatisfactory attributes when formed into NFC orange juice. Other cultivars, such as the Ambersweet cultivars (mentioned in secondary references) have good color and BAR values. They also have very suitable taste properties when unprocessed. However, when processed into NFC orange juices, their good sensory qualities do not hold. Instead, processing into NFC juice deteriorates sensory qualities of these juices. They do not provide satisfactory NFC juice products which can be beneficially used in blending with other juice products in making mid-season NFC orange juice products as claimed.

The above illustrates the unpredictability of taking teachings such as those of Bonaventura and applying them to an NFC invention as presently claimed. One cannot obviously take the teaching from non-NFC art, such as Bonaventura, and move it into NFC art with the expectation that a mid-season juice of the type taught by the present invention can be arrived at.

Furthermore, Bonaventura has absolutely no teaching of the mid-season cultivars which are specified in applicants' claims. Neither Vernia nor Frost cultivars are taught in Bonaventura as being mid-season cultivars. And, of course, since Bonaventura does not relate to NFC pasteurized juices, Bonaventura clearly does not teach incorporating Vernia and/or Frost cultivars into NFC juices.

None of Bonaventura or the secondary references have any teaching that Vernia and/or Frost cultivars provide especially advantageous mid-season NFC juices which have equal or better sensory properties (as well as BAR and/or color

properties) than the cultivars having their respective peak harvest seasons theretofore or thereafter.

More specifically, the art does not teach or suggest that Vernia and/or Frost cultivars provide NFC juices which have a peak harvest season between those of the commercial standard in the earlier season, namely Hamlin round oranges, and the commercial standard in the late season, namely Hughes Valencia and Rhode Red Valencia round oranges, and which provide such a mid-season juice which is equivalent or superior to these Hamlin and Valencia NFC juices. In addition, the Vernia and Frost NFC juice provides color and BAR values which also are equivalent or superior to Hamlin and Valencia NFC juices.

Sensory Qualities of the Claims

The claims specify that the inventive NFC juices have "sensory qualities equivalent or superior to" the earlier season Hamlin NFC juices and the late season Hughes Valencia and Rhode Red Valencia NFC juices. These "sensory qualities" are not subjective fruit tasting which is mentioned in some cited art.

These "sensory qualities" of the claims are objectively determined and plotted in FIG. 1 through FIG. 4D of the present application. They are discussed, for example, from line 15 of page 21 through line 9 of page 22, as well as in Examples 1, 3, 4 and 5. As noted thereat, these sensory qualities are identifiable by trained sensory panels and are disclosed herein as numerical values of the positive sensory qualities of sweet, raw orange and total orange and of the negative sensory qualities of package, green, sour, bitter, feeling factors and other citrus. The sensory qualities of the

data in the application, and in the Declarations noted herein, are of NFC processed juices.

Taggart and Keithly Declarations Show Unpredictability of NFC Processing

The previously submitted Declaration of Thomas Taggart includes a report on two basic sets of tests conducted on seven different round orange cultivar juices, including blood orange juice. The color was very exceptional, and the juice chemistry values of Brix, BAR, Vitamin C content and Scott oil percentage were acceptable. In addition, when subjected to sensory testing, the blood orange juice was favorable as freshly cut fruit or as unprocessed juice. However, when made up into NFC juice, including pasteurization, the blood orange juices were unacceptable, being soapy and bitter.

The previously submitted Declaration of James H. Keithly included Keithly Exhibits 1 and 3. Paragraph 5 of this Declaration shows that unprocessed blood orange juice and Ambersweet orange juice showed exceptional color and reasonable or exceptional juice chemistry, namely BAR.

Presently submitted Supplemental Declaration of James H. Keithly adds that the taste of the juice of the unprocessed blood orange and Ambersweet fruit was very suitable. See paragraph 4. Paragraph 3 of this Supplemental Declaration notes that juices from these cultivars also were processed into NFC orange juices in accordance with commercial NFC processing, which included mechanically extracting and pasteurizing the juice from each cultivar. A sensory panel of experienced orange juice evaluators was used at this stage. As noted in Paragraph 5 of the previously submitted Keithly Declaration, the blood

orange and Ambersweet juices which had been thus processed into NFC juice did not have suitable juice sensory attributes.

Therefore, the data in the record show that blood orange cultivar juice (and Ambersweet cultivar juice) have very acceptable color, juice chemistry and taste prior to processing into NFC juice. But when mechanically extracted and pasteurized into NFC juice, they did not possess both attributes of the present claims, namely sensory qualities equivalent or superior to earlier peak season harvested NFC juices (Hamlin) and to late peak season harvested NFC juices (Hughes Valencia, Rhode Red Valencia).

These data show the unpredictability which necessarily is present when dealing with very complex systems such as orange juices. Even excellent color, yield and juice chemistry properties of unprocessed orange juices cannot be predictive for NFC systems, where the juices have to undergo the rigors of mechanical extraction and the elevated temperatures of pasteurization. Some juices have a complex of components which create sensory negatives while other do not.

The Claimed Invention Is Not Obvious Due To "Result Effective Variables"

The Office takes the position, on page 4, that the claimed invention is unobvious under *In Re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). The Office alleges that the claimed invention involves choosing a particular cultivar to achieve a particular color, Brix and taste was due to result effective variables. The Office states that hundreds of cultivars shown in the art are reported with Brix, color and **acidity** values. This is not disputed by applicants. The Office then goes on to

suggest that a juice containing a particular color, Brix and **flavor** would obviously be arrived at by blending together juices containing these variables.

Applicants first of all note that acidity and flavor are not the same thing, as the passage on page 4 of the Office Action apparently assumes. Also, the Office correctly does not suggest that the art shows the sensory qualities as claimed and discussed herein.

While the Office can make the statement on page 4 that picking out juices would have been within the skill of the ordinary worker, this is not borne out by the cited art. For this proposition, the Office cites pages 7 and 9 of Castle et al., "Horticultural Field Day", St. Cloud, Florida, December 2, 1992. Perhaps the Office suggests this reference recognizes the objective achieved by the present invention. Applicants disagree. Even so, stating an objective or recognizing a problem does not render unpatentable the solution to that problem. Assuming *arguendo* that Castle et al. states the problem which is solved by applicants, the Office has made no showing that any of Castle et al., the primary reference, or the secondary references, either alone or in combination, provide a teaching of applicants' claimed solution to the problem.

The Office fails to support its allegation of obviousness from the art itself. It suggests it has made a case of *prima facie* obviousness by stating that juice blending is generally known. Clearly, applicants have never suggested that juice blending is novel *per se*. Applicants do not claim juice blending in general. Applicants do not even claim the general proposition of using juice having a mid-season peak harvesting time with juices having earlier or late natural peak season

maturities. Applicants claim only using specific cultivars, Vernia and/or Frost cultivars, for providing freshly extracted mid-season juices, and making the same into NFC juices which are blended with other juices and have the properties as claimed.

Bonaventura

Bonaventura reports upon storage experiments for blood oranges. The principle variant in these tests was the storage temperature. In essence, Bonaventura reports that, if one follows blood orange production in Sicily, the shelf life of extracted juices can be extended by refrigeration temperatures bordering upon freezing temperatures.

The version of Bonaventura which was published in English (copy resubmitted herewith) teaches in the very first paragraph that the Bonaventura juices are: "neither pasteurized nor frozen, but simply refrigerated" (emphasis added). Since they are simply refrigerated and not pasteurized, they cannot be NFC juices, as applicants claim. In addition, Bonaventura says that the bottles (not the juices) were sterilized or "aseptic". See the top of the first column on page 286 and the middle of the first column on page 289. Bonaventura does not teach the cultivars specified in applicants' claims. Even if Bonaventura teaches using mid-season cultivars, any case of *prima facie* obviousness is overcome by the Taggart Declaration which was previously submitted by applicants to compare the invention with Bonaventura. This is further supported by the Declaration and the Supplemental Declaration of James H. Keithly. See the discussion hereinabove concerning these three Declarations.

As noted in these Declarations, blood oranges and unpasteurized blood orange juice compared favorably with other

cultivars and unpasteurized juices. This is not inconsistent with Bonaventura et al and their "neither pasteurized nor frozen" blood orange juice. However, when the blood orange juice was made into not from concentrate orange juice, pronounced off-flavors were evident. In response to the position taken by the Office, the Declarations show that blood oranges processed into NFC juice did not maintain its suitable taste attributes. Instead, its sensory properties were inferior.

Accordingly, in general, the very type of orange category, namely **blood oranges**, which are **exclusively** the subject of Bonaventura were found to be unsuitable for use in the purview of the invention, namely commercially produced not from concentrate orange juice.

Concerning blending of juices, Bonaventura's reported blends of **blood orange** juices were combinations of fresh-from-the-tree **blood orange** juice and juice from third quality **blood oranges** from whole fruit packing houses. Bonaventura et al teach blending these different **blood orange** sources. This reference has no suggestion of combining cultivars except for those which are the same cultivar, namely a blood orange cultivar.

Bonaventura et al. do not teach blending their blood orange juices with juices from orange cultivars which have their peak harvesting at times different from a blood orange. There is no teaching of blending its blood orange juices with any earlier or late peak maturing non-blood cultivars. There is no teaching of blending its blood orange juices with any Hamlin or Valencia juices.

Bonaventura et al. do not teach blending a mid-season

orange juice of a Vernia cultivar and/or a Frost cultivar with another orange juice source which is neither a Vernia nor a Frost cultivar, such as a late season maturing orange (e.g., a Hughes Valencia or a Rhode Red Valencia) source before its peak harvesting season. There is no teaching, as applicants claim, of blending NFC Vernia and/or Frost orange juices with NFC Hamlin and/or Valencia orange juices.

The Office relies heavily on Bonaventura and its teachings concerning blood oranges. Applicants understand the Office to suggest that other art such as Castle et al. and the applied secondary references, remove the deficiencies of Bonaventura by teaching that is known to blend juices of cultivars different from each other (as opposed to only blood oranges per Bonaventura) and juices which have respective peak maturities at different times of the growing season (as opposed to Bonaventura which shows harvesting of blood orange cultivars at peak and also at less desirable harvest times).

This approach of the Office does not take into consideration the reality that one cannot take non-NFC information from a reference such as Bonaventura and secondary references and apply same to the NFC citrus juice industry. The Taggart and Keithly Declarations demonstrate that blood oranges are very suitable for the Bonaventura type of use and juice, but they are not suitable for NFC use. Similar situations apply to other cultivars which are not found in Bonaventura but which are found in the art. These include Ambersweet juice. Also included are the several other juice cultivars which are noted in the Taggart and Keithly Declarations.

The prior art has not recognized that Vernia cultivars and/or Frost cultivars are advantageously harvested at a time

which is just needed for solving the problem referred to above, namely providing freshly extracted juices between the earlier Hamlin freshly harvested juice and the later two Valencia freshly harvested juices. This is illustrated, as previously discussed, in Fig. 1 of the present application. This data plot shows excellent overall sensory quality scores for Vernia juice precisely at the time when both the so-called early/mid juices such as Hamlin are on the wane and before the Valencia juices reach their peak overall sensory qualities. These data are for NFC juices. This shows that NFC Vernia juice has superior overall sensory qualities at precisely time needed for solving the problem which has been recognized by the invention. The cited art does not teach this.

Contrary to this performance and the claim invention, blood orange juice, when and made into NFC juice, has overall sensory qualities which are clearly inferior to either Hamlin or Valencia NFC juices. Nothing in the cited art provided any suggestion that Vernia or Vernia and/or Frost cultivars would perform in this positive sensory manner when made up into NFC juice.

Accordingly, Bonaventura, even when read in the light of art such as the Castle et al. article, does not provide a teaching of the claimed invention or render it obvious when combined as noted in the Office Action. In applicants' view, this art does not even provide a precise teaching of the problem which has been solved by applicants.

The Secondary References

Turning now to the secondary references which were relied upon in the Office Action, none of them provide a

teaching which answers the deficiencies of the primary reference as noted above and in the Office Action.

Regarding the *Citrus Industry* article, the Office Action indicates that this shows that the characteristics of each orange cultivar can be easily determined. The Office suggests that picking out a cultivar having desired properties is obvious because their characteristics are there to choose from. However, the characteristics which are of importance to solving the problems solved by the claimed invention are not shown in the cited art. They are not there to choose from.

The *Citrus Industry* article has no sensory data on any of the about 13 cultivars (including Vernia) mentioned therein. All of the tables have only yield data, color number data, and BAR data. The only disclosure even remotely close to sensory data are summarized at the top of the middle column on page 25, as follows:

"The comments on juice flavor are from sampling fruit in the field. A number of people, including myself tasted fruit every season. The flavor remarks are a rough consensus of those subjective evaluations. Also two members of grower-coops who are very familiar with the fresh fruit business were asked to evaluate the fresh fruit potential of these selections over two consecutive seasons. And their comments form a part of the descriptions as well."

From this, and from the rest of the general comments in this *Citrus Industry* article, no sensory data are provided as reported in the present application. There are no data on juices subjected to NFC processing. The juice flavor information in *Citrus Industry* amounts to merely tasting fruit in the field or fresh fruit.

Concerning the **Pao et al.** article, applicants understand the Office recognizes same does not relate to NFC juices. The Pao et al. article relates to a study to improve qualities of early season Hamlin orange juice and Marsh grapefruit juice. It relates to only "individual and blended unpasteurized" citrus juices. It provides no suggestion of Vernia cultivars or Vernia and/or Frost cultivars, of using same to fill the gap between the Hamlin NFC orange juice season and the Hughes Valencia and Rhode Red Valencia NFC orange juice season, and it provides nothing whatsoever to suggest that Vernia NFC juice or Vernia and/or Frost NFC juice provide an NFC juice which is advantageously blended with other juices and which blends are equivalent or superior to the other freshly extracted juices available in the mid-season.

Another secondary reference, **Gmitter** is cited by the Office as disclosing the use of information about juice quality and maturity season as major and guiding forces for the selection process **in tree breeding**. Applicants' invention has nothing to do with tree breeding. Furthermore, Gmitter has no teaching about any properties of Vernia or Frost cultivars, let alone their characteristics as NFC juices. Gmitter gives yield, juice chemistry and color indicators for other cultivars not within the claims, does not teach NFC juice, and does not provide or suggest any NFC sensory information.

The **Widmer** paper is relied upon by the Office as disclosing using early maturing fruit (Amebersweet) which is rich in orange color to improve the color of early season processed juice. Applicants' invention does not relate to early season processed juice. As stated previously, applicants do not dispute the general concept of blending NFC juices of different

colors is known per se. Widmer does not suggest any of the cultivars specified as starting materials in the present claims, nor does this reference suggest the Ambersweet juice of the article has sensory qualities equivalent or superior to the sensory qualities of NFC Hamlin juice or Valencia juice. In fact, as shown in the Taggart and Keithly Declarations, Ambersweet provides an NFC juice which does not have sensory attributes substantially equivalent to those of NFC Hamlin juice (one of the juices noted in applicants' claims).

This Widmer paper further supports the unobviousness of the present claims because this paper supports the observation that Ambersweet showed great promise for the NFC industry. However, as noted in the Todd Declaration (paragraph 16) submitted with the previous Amendment, Ambersweet has not been successful as a source of processed juice, despite many acres of Ambersweet trees having been planted in commercial groves.

Unobviousness Criteria are Present Under the MPEP and Decisional Law

Until the solution achieved by the present invention, the problem which applicants recognized of providing an improved NFC juice from cultivars extracted in the mid-season was not fulfilled in the NFC industry. Nothing in the record teaches or suggests otherwise.

The unobviousness of the presently claimed methods and products is further illustrated by the failure of cultivars other than those which are starting materials in the claimed invention. From teachings and data in the record, the yield, juice chemistry (including BAR) and color indicators of blood

oranges indicate they would be a good candidate. However, information in the Taggart and Keithly Declarations shows that when blood oranges were used in NFC processes, they were found to have sensory qualities less desirable than those of NFC Hamlin orange juice, the earlier peak season cultivar recited in the present claims as a benchmark for defining the present invention. The claims specify that the claimed NFC juice compositions have sensory qualities and BAR values equivalent or superior to those of the earlier peak season Hamlin orange juice.

As supported in the present record, there is no reasonable expectation that juice from cultivars having good yield, good color and good juice chemistry values can be predicted to be suitable as a starting material for the claimed NFC methods and products. Some cultivars, such as blood oranges, give very poor results when thus used.

MPEP §2143.02 states that a reasonable expectation of success is required to make a *prima facie* obviousness rejection. This section further notes that at least some degree of predictability is required and that evidence showing there was no reasonable expectation of success may support a conclusion of nonobviousness. *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976). See also, *Amgen, Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 18 USPQ2d 1016 (Fed.Cir. 1991).

As noted in *In re Dow Chemical Co.*, 837 F.2d 469, 5 USPQ2d, 1529 (Fed. Cir. 1988):

Both the suggestion and the expectation of success must be found in the prior art, not in applicant's disclosure.

With the claimed invention, the references relied upon in the obviousness rejection do not suggest that Vernia or Vernia and/or Frost cultivars would be useful as a starting material for the methods and products as claimed. Only applicants' disclosure, not the cited references, provide any expectation of success that using Vernia and/or Frost cultivars would achieve the claimed invention.

The prior art does not provide sound information to distinguish among the cultivars listed in the prior art which would allow adequate predictability for suitable use as starting materials of the claimed methods and products. Information in the record clearly shows that cultivars of the references on which the Office relies are not suitable for the present invention. This shows unobviousness. See *In Re Schechter et al.*, 205 F.2d 185, 98 USPQ 144 (CCPA 1953), and MPEP §2144.08(e). (Unpredictability in insecticide field warrants patentability over prior art known effective insecticides which are isomers and homologs of claimed compound.)

Where technology is unpredictable as is the case here, it is less likely that similar species will render a claimed species obvious. Any properties which might have been expected must be balanced against the unexpected properties. *In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978). Here, properties mentioned in the prior art (high color, acceptable juice chemistry, good yield and general subjective flavor observations for non-NFC juice) do not render the claims obvious in view of the unexpected mid-season gap filling features of the claimed invention.

Applicants have submitted objective evidence of secondary considerations including unexpected results, long-felt need and failure of others. This objective evidence must be fully considered by the Office. MPEP §2141.

Concerning unexpected results, one of ordinary skill in the art may look to data available in the cited references (yield, color and juice chemistry) of certain (non-claimed) cultivars with the expectation of success. However, data provided by applicants show lack of success for these very same cultivars in solving the problem which the invention of the present claims has solved. The failure of others in fulfilling the long-felt need is well-documented by the Ambersweet activities of secondary references as noted in the record and by the failure of blood oranges of the primary reference to maintain its promising properties when used in NFC processing. None of the cited art provides any teaching of the unexpected sensory properties for NFC juices and methods which are claimed by the present invention.

In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993) held that obviousness cannot be predicated on what is not known at the time an invention is made, even if the inherency of a certain feature might be later established. See also MPEP §2141.02. More particularly, it is not proper for the Office to assume properties or features not disclosed in the prior art. As recognized in *Rijckaert*, obviousness cannot be predicated on what is unknown, citing *In Re Spormann*, 363 F.2d 444, 150 USPQ 449 (CCPA 1966). A retrospective view on the suitability of certain cultivars for achieving the claimed invention is not a

substitute for an actual teaching in the prior art. See *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989).

Claimed properties cannot be assumed. A property such as having sensory qualities substantially equivalent or superior to specific other NFC juice sources can be an obvious property only if that property is actually disclosed in the prior art, and a person of ordinary skill in the art must recognize its presence. *Crown Operations International Ltd. v. Solutia, Inc.*, 289 F.3d 1367, 62 USPQ2d 1917 (Fed. Cir. 2002). (Prior art references did not disclose or discuss a particular reflectance property of the claims, and that property cannot be assumed because the prior art discloses the same structure as claimed in the patent.)

Furthermore, when a measured property serves to point up a distinction from the prior art, or advantages over the prior art, that property is relevant to patentability, even if same is an inherent property of the claimed invention. *In re Glaug et al.*, 283 F.3d 1335, 62 USPQ2d 1151 (Fed. Cir. 2002).

There are gaps in the cited prior art. Applicants' own disclosure may not be used to fill in the gaps of the prior art. Evidence of properties of the cultivars must come only from the prior art. The standard of obviousness is not that something is "not inconceivable". Conceivability alone will not establish obviousness. *In re Grabiak et al.*, 769 F.2d 729, 226 USPQ 870 (Fed. Cir. 1985).

As recognized in MPEP §2145, it is improper to apply an "obvious to try" rationale in support of an obviousness rejection. As noted in that section, it is not proper to base

an obviousness determination on whether it would have been obvious to:

try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful. (MPEP §2145 citing to *In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988)).

Here, Bonaventura and the secondary references do not teach any solution to the mid-season gap problem. Bonaventura does not even address the problem. And its only cultivars, blood oranges, have been shown by applicants to fail to satisfy the invention. None of the references teach the claimed solution. See also, *Pin/Nip, Inc. v. Paltte Chemical Company*, 304 F.3d 1235 (Fed. Cir. 2002) (Federal Circuit affirmed that a patent claim was not invalid as obvious. If "obvious to try" were a proper rationale, invalidity might have been found.)

The prior art cited against the present application cannot be used to render the present claims obvious by using an "obvious to try" approach.

Conclusion On Unobviousness

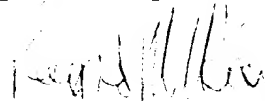
In summary, the methods and products of the present claims did not exist prior to the present invention. These novel methods and products are unobvious when one considers the invention as a whole, without the benefit of hindsight, and without applying an "ought to be tried" standard. *Hodosh et al. v. Block Drug Company, Inc.*, 786 F.2d 1136, 229 USPQ 132 (Fed. Cir. 1986). Bonaventura and the secondary references do not show a reasonable expectation of success in achieving this

claimed invention. Objective secondary considerations such as those in the record help to illuminate that the present claims are unobvious and are not properly rejected under 35 USC §103. *Hodosh, Id.*

Reconsideration and withdraw of the Section 103 rejection are respectfully requested, as is the allowance of claims 1-21, 23-26 and 28-30.

Applicants have made an earnest endeavor to place this application into condition for allowance, and favorable consideration is respectfully requested.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

--1. (Thrice Amended) A method of commercially producing a not from concentrate orange juice product, comprising:

harvesting a mid-season round orange cultivar selected from the group consisting of a Vernia cultivar, a Frost cultivar, or a combination of these mid-season cultivars, said harvesting providing said mid-season orange cultivar which has its peak properties during a time period after the peak harvesting season for earlier [early-to-mid] season round orange fruit having a peak harvesting season earlier than said mid-season orange cultivar, namely Hamlin orange fruit, and before the peak harvesting season for late season round orange fruit, namely Hughes Valencia and Rhode Red Valencia orange fruit, each peak harvesting season being within the growing territory of the mid-season cultivar;

extracting juice from a volume of said mid-season round oranges;

collecting the resulting extracted orange juice as a mid-season orange juice having a Brix-to-acid ratio (BAR) during said harvesting which is greater than that of either said [early-to-mid] earlier season round orange fruit or said late season round orange fruit harvested within the time period of said harvesting; and

blending, on a commercial scale, said collected mid-season orange juice with another orange juice source [in order to provide a] and providing a not

from concentrate juice composition therefrom having a greater BAR value than, and sensory qualities equivalent or superior to, the BAR value and the sensory qualities, respectively, of orange juice from either said earlier [early-to-mid] season round orange fruit or said late season round orange fruit harvested during said harvesting season[; and

said blending provides a not from concentrate orange juice, which is a pasteurized juice].--

--21. (Four Times Amended) A method of commercially producing a not from concentrate orange juice product, comprising:

harvesting a mid-season round orange cultivar selected from the group consisting of a Vernia cultivar, a Frost cultivar, or a combination of these mid-season cultivars, said harvesting providing said mid-season orange cultivar which has its peak properties during a time period after the peak harvesting season for [early-to-mid] earlier season round orange fruit having a peak harvesting season earlier than said mid-season orange cultivars, namely Hamlin orange fruit, and before the peak harvesting season for late season round orange fruit, namely Hughes Valencia and Rhode Red Valencia orange fruit, each peak harvesting season being within the growing territory of the mid-season cultivar;

extracting juice from a volume of said mid-season round oranges;

collecting the resulting extracted orange juice

and providing [as] a not from concentrate mid-season orange juice having a Brix-to-acid ratio (BAR) during said harvesting which is greater than that of either said early-to-mid season round orange fruit or said late season round orange fruit harvested within the time period of said harvesting of the mid-season cultivar;

blending, on a commercial scale, said [collected] not from concentrate mid-season orange juice with another orange juice source in order to provide a not from concentrate juice composition having a greater BAR value than, and sensory qualities equivalent or superior to, the BAR value and the sensory qualities, respectively, of not from concentrate orange juice from either said earlier [early-to-mid] season round orange fruit juice or said late season round orange fruit harvested during said harvesting season;

said collecting provides an orange juice source having a Color Number of at least 36 CN units; and

said blending blends at least about 5 volume percent, based on the volume of the orange juice, of said mid-season juice with said another orange juice source in order to provide [an] said not from concentrate orange juice product with [having] a Color Number in excess of 36 CN units[; and

said blending provides a not from concentrate orange juice, which is a pasteurized juice].--

--23. (Four Times Amended) A method of commercially producing a not from concentrate orange juice product,

comprising:

harvesting Vernia cultivar round oranges which have their peak properties during a time period after the peak harvesting season for [early-to-mid] an earlier season round orange fruit having a peak harvesting season earlier than said Vernia cultivar, namely Hamlin orange fruit, and before the peak harvesting season for late season round orange fruit, namely Hughes Valencia and Rhode Red Valencia orange fruit, each peak harvesting season being within the growing territory of the Vernia oranges;

extracting juice from a volume of said Vernia round oranges;

collecting the resulting extracted orange juice and providing [as] a mid-season orange juice having a Brix-to-acid ratio (BAR) during said harvesting which is greater than that of either said early-to-mid season round orange fruit or said late season round orange fruit harvested within the time period of said harvesting of the Vernia oranges; and

blending, on a commercial scale, said collected mid-season orange juice with another orange juice source and providing [in order to provide]a not from concentrate juice composition having a greater BAR value than, and sensory qualities equivalent or superior to, the BAR value and the sensory qualities, respectively, of orange juice from either said earlier [early-to-mid] season round orange fruit or said late season round orange fruit harvested during said harvesting season[; and

said blending provides a not from concentrate orange juice, which is a pasteurized juice].--

--26. (Four Times Amended) A method of commercially producing a not from concentrate orange juice product, comprising:

harvesting Vernia cultivar round oranges which have their peak properties during a time period after the peak harvesting season for [early-to-mid season round orange fruit, namely] Hamlin round orange fruit, and before the peak harvesting season for late season round orange fruit, namely Hughes Valencia and Rhode Red Valencia orange fruit, each peak harvesting season being within the growing territory of the Vernia orange;

extracting juice from a volume of said Vernia round oranges;

collecting the resulting extracted orange juice and providing [as] a mid-season orange juice having a Brix-to-acid ratio (BAR) during said harvesting which is greater than that of either said [early-to-mid season] Hamlin round orange fruit or said late season round orange fruit harvested within the time period of said harvesting of the Vernia oranges;

blending, on a commercial scale, said collected mid-season orange juice with another orange juice source in order to provide a juice composition having a greater BAR value than, and sensory qualities equivalent or superior to, the BAR value and the sensory qualities, respectively, of orange juice from

either said early-to-mid season round orange fruit or said late season round orange fruit harvested during said harvesting season;

said collecting provides an orange juice source having a Color Number of at least 36 CN units; and

said blending blends at least about 5 volume percent, based on the volume of the orange juice, of said Vernia juice with said another orange juice source in order to provide an orange juice product having a Color Number in excess of 36 CN units, and said blending provides a not from concentrate orange juice[, which is a pasteurized juice].--

--28. (Thrice Amended) A not from concentrate orange juice composition comprising a blend of:

up to about 99 volume percent of a mid-season orange juice supply, based upon the total volume of the composition, said mid-season juice being a not from concentrate orange juice, [which is a pasteurized juice,] said mid-season juice having a sensory profile equivalent or superior to that of 100 percent Hughes Valencia or Rhode Red Valencia orange juice from fruit harvested at about the same time as fruit from which said not-from-concentrate mid-season juice originates;

at least about 1 percent by volume of an orange juice supply other than said mid-season orange juice supply, based upon the total volume of the composition; and

said fruit from which the not-from-concentrate mid-season orange juice originates is a round orange cultivar

U.S. Serial No. 09/583,334 - 37 -

selected from Vernia cultivars, Frost cultivars, or a combination of these mid-season cultivars.--